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ABSTRACT

Almost since its inception, the word "dehumanization" has caused apprehension, especially as the words relate to educational technology. This paper is a brief analysis of educational technology's critics from the late 1950s through present time; it also serves as a study of how their rhetoric has affected the structure of elementary and secondary education in recent years. Discussion includes revisionism, objectivity, and the "teaching machine" (1960s); computer assisted instruction, educational television, and resistance at the trends of systems analysis and individualized instruction (1970s); and militarization, computers, technical jargon, and science fiction (1980s). Poor interaction, discussion, and literacy skills are some of the problems facing students as a result of imbalanced technological structuring. (Contains 19 references.) (AEF)

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Dehumanization: An Overview of Educational Technology's Critics

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Almost since its inception, the work "dehumanization" has caused many to feel apprehensiveness, especially as the words relate to Educational Technology. Like "human engineering", dehumanization carries a stigma of Orwellian proportions which is not likely to dissipate. This phenomenon, as it relates to the field can be traced back to the turn of the century, or possibly even further. We have witnessed a revolution in classrooms since those days, from one room schoolhouses to giant city and metropolitan school districts. "The building of technologies have made it possible for people to cluster together in huge numbers in urban centers where they live a segregated kind of life which no one notices-not segregated according to black and white, but segregated according to income bracket" (Taylor, 381).

Some would argue that the implementation of new technologies is recent years has caused us to forget our own humanity. "What is good must have accountability, must have behavioral objectives; in effect must be efficient" (Meierdiercks, 8-9). This paper is a brief analysis of Educational Technology's critics from the late 1950's through the present time. It also serves as a brief study of how their rhetoric has affected the structure of the K-12 classroom in recent years.

"The emerging era of high technology has made its promises that life will be easier and its problems more easily solved. The result of this slow but persistent change has been a shrinking concept of education as we have looked toward a concept of "training" rather than education" (Nelson, 9). When looked at in retrospect, it is truly astounding how much technology has influenced each of our lives. More innovations have been developed in the last 58 years than in most of recorded history. "as time passes, technology multiplies in staggering exponential terms" (Smith, 3).

The fundamental problem addressed in this paper, however, does not concern itself with technology's rapid growth exclusively. This is mainly because, its growth, for all intents and purposes, is simply a factor, capable of neither good nor bad. It is the importance we attribute to certain things, however, which gives them their intrinsic value in our daily lives. Technology, then, as it pertains to education, is certainly no exception. According to many critics, the variable of technology which once seemed so promising, has fallen from use into abuse in recent times. It is this abuse, they contend, which has served as a catalyst in aiding dehumanization in the K-12 classroom setting.

The Sixties: Revisionism, Objectivity and the Teaching Machine

The decade of the sixties opened with a continued emphasis on hard sciences and objectivity in the American curriculum. While records, tapes, and film continued to gain popularity in classrooms, many teachers struggled to maintain a sense of individuality both for themselves and for their students. Some of the era's new inventions, which would now be considered novelties, posed a valid threat to teachers who were uncomfortable with technology's implementation in the school environment. One such innovation was a clever little devise created in 1962 by Kobler and Moore. It was know as the talking typewriter, and although it was quickly phased out as a passing fad, many students took a quick liking to it.

Harold Taylor, in his 1964 address to the DAVI Convention stated that technology has often been a key factor in imbalancing our values as a nation. In essence, Taylor surmised that America had become "a society which is as dazzled by technological accomplishments as it is powerless to act on the most serious problems created by them" (Taylor, 382). During that time period, it appears that many of Taylor's comments were not terribly far from the truth of the situation. He saw no needs or incentives for students to stay in schools that were quickly becoming (as Herbert Kohl once defined them), "grim, joyless places."

Taylor was not the only critic who harbored this revisionist attitude toward modern education. In later years, other personalities emerged to stress the need for increased humanity in the system. "One might add that the future would take on profoundly different meaning if the revisionist's vision were to prevail." Bowers was also quick to not the "symbolic fragmentation and increasing loneliness that appears to result from the low-context form of modern, technologically-based cultures" (Gowers, 280).

Nevertheless, many in education continued to look at technology through rose-colored glasses, and the many education possibilities it seemed to promote., Interest was even re-kindled in old educational devices, some of which had been operationally dormant for 30 or more years. One such instrument was Pressey's teaching machine, which distributed rewards (such as candy) for correct answers to questions. This

renewed excitement in objective theories helped to put psychologists like B. F. Skinner back in the education spotlight.

His 1968 book, "Teaching Machines", chronicled his use of conditioning upon common pigeons, and the results he received. Though it was simply a collection of his old essays, its wild popularity seemed to indicate that schools were not ready, or particularly fond of moving away from behavioral objectives.

The Seventies: CAI, Educational Television, and Resistance

The seventies became a witness to large scale computer experiments, CAI, reading instruction, cable television, and intensified individual instruction. Readi Television, was, by this theme, a powerful and well-integrated tool for both elementary and secondary education. Shows like Sesame Street and the Electric Company became popular in the curriculum for students around the ages of 7 through 10. Films, filmstrips, tape recorders, and phonographs became a mainstay in seventies classrooms. Though the personal computer was still in development in the early seventies, the excitement had already begun over their eventual implementation.

In 1972, Nila Banton Smith cited three fundamental problems with technology in regard to its use in education: Cost (4 to 6 million at the time), resistance, and most notably, its dehumanizing effect. "A controlled study recently made with 'junior high school students at Stanford University indicates that computers are more charismatic then teachers" (Smith, 12). Though Smith cited this as a potential problem, she also indicated that it was perhaps better for the students to make a "truce" with technology rather than resist it. This "truce" could generally be thought of as a compromise between the learner and the inevitable advent of the impressive machine.

Eric Hoffer was once quoted as saying that "We never can be fully prepared for that which is new. We need to adjust ourselves, and every radical adjustment is a crisis in self-esteem...it needs inordinate self confidence to face drastic change without inner trembling." But for many educators during the seventies, the inner trembling had already begun. For some, the threat of new technology only served to compound their ,struggle to teach a given curriculum. "When technology is added to the traditional classroom, in many cases, the addition is simply another overlay of administrative, managerial detail" (Evertson, Stallings, 58).

John Belland also took note of this phenomenon examined some of its inherent problems in his 1975 essay, "1984 is Only Nine Years Away: Will School Media Programs Humanize or Dehumanize Schooling?" again, images of Orwell are conjured up for the reader's consumption, as Belland confronts the man-machine controversy directly. In his essay, the author makes it quite evident that the choice of whether to humanize or dehumanize rests solely with the human race. "We are faced with the very real question of whether the technology which has been evolved by human beings to meet human needs serves to liberate us or serves to enslave us" (Belland, 3). Furthermore, Belland contends that media are simply extensions of people, and that technology should be policed to insure that they remain that way.

Systems Analysis and Individualized Instruction-Continued

Systems analysis was one of the many controversial trends that surfaced during the 1970's. Though the sixties saw much of the advent of this instructional technique, the seventies helped to saturate the process and make it an integral part of the overall curriculum. At the time, it may have seemed that the term "individualized instruction" implied a more student-centered approach. Some critics, however, regarded it as nothing more than the complete antitheses of its name.

> In any case, such a concept of individualizing hardly meets the demand to personalize the school, for critics are aiming their attacks at the content taught as well as the procedure for teaching it. Obsolete or irrelevant material learned in small segments is no less obsolete or irrelevant. Segmented junk is still junk (Hyman, 414).

In addition, Hyman concludes that individualized instruction contributed to loss of classroom interaction, discussion, peer conferencing, and other related schoolroom activities, The focus, according to Hyman's reasoning, should be on content rather than procedure. This sentiment was shared by other critics

of the period, including John W. Alden. It was Alden's argument that educators of the seventies were unable to take technology and apply it in a way which was beneficial in promoting learning among students. "I believe that we are so enamored with techniques, particularly when they are computer related, that we often lose sight of the reason for the technique in the first place" (Alden, 3).

Many agreed with Alden's views during the seventies, and noted that systems analysis had not its focus as an interlocking program. The human element of the process was slipping away, with technological momentum gradually taking its place. Overall, the general attitude persisted that educational institutions were producing students who were merely meek repeating machines. "Most educators would not like to hear students described as meek; but received, memorizing, and repeating would hardly raise an eyebrow" (Christenbury,5).

This submission of man to machine was something that continued to both fascinate and disturb critics during the seventies. Kenneth D. Benne, in a 1975 article, outlined some of the dehumanizing trends he saw inherent in the modern day educational system. "Schooling is seen and practiced as a process in which "correct" environmental influences, predetermined by adults, are brought to bear upon assuredly passive and plastic learners to produce educational "products" needed by society (Benne, 45).

Unlike more conventional-minded educational technology critics of his time, Benne took a more creative approach to analyzing the situation by writing a poem. In it, he personifies technology as an overwhelming deity which had awestruck it followers to the point of nearly complete submission:

> Faceless or whith averted faces, I stood alone and I could hear
>
> Their almost human voices-impressive sound
>
> Well amplified, most high-fedility-commanding "Kneel!"
>
> I did not kneel. And from me came a bleat-
>
> Most poorly modulated low-fidelity- "I do not feel your right to make me kneel.

This deity, by the end of 1970'2, was certainly a force to be reckoned with, especially in regard to teaching. The teacher's and was continuing its demise. "Teaching related issues appear not to be taken very seriously; issues such as individual philosophical orientations and their reasons for being a teacher" (Jorgenson, 264).

Ken Meierdiercks, in a 1980 article, noted technology's ability to swallow virtually anything that stands in its was. "Our technological society is much more dynamic and devouring than any other in history (Meierdiercks 8,9). By this time, society had, in many ways, become the technological future world which George Orwell had boldly envisioned.

The Eighties: Militarization, Computers, Vocabulary, and Science

Militarization

The repercussive embers of Sputnik remained evident throughout the eighties, as critics continued to evaluate how well the educational movement's long term goals were met. During the 'Reagan Administration, there was an attempt to hold military funding to a more militaristic standard. "In order to improve instruction and in order to legitimate their profession through the incorporation of new technologies and the latest applications of scientific research, the schools have unwittingly welcomed the Trojan Horse of military prerogatives within their gates" (Nichols, 182).

The teacher, in a sense, is regarded as the unassuming victim of this abrupt technological invasion. The "microcomputer phenomenon" which began in the eighties and continues to this day is viewed by Noble as the "most visible" symbol of educational dependence. In other words, the very military which

helped develop computer science was now helping to dehumanize the educational school process. "To the degree that our purchases are less professionally conceived activity attending primarily to education, and more a social imperative connected to economic, political or military gain, our buying hardware can be called negative" (Nichols, 128).

Meanwhile, teachers continued to feel their influence waning as they too became slaves to the powerful forces of Educational Technology., This problem, as it relates to the study of language arts was recognized and commented on by J. Amos Hatch in 1984. "Teachers look and act like instructor-technicians as they teach reading. They march their students along the reading system and instructional management assembly lines using timetables, materials, and strategies prescribed by invisible decision makers" (Hatch, 248).

Many critics found this trend particularly unnerving because it tended to discount the very art of teaching itself. Individual teaching styles, as well as knowledge of pedagogy became incidental when compared directly with facilitation skills. Part of this downward spiral, according to Hatch and others, could be attributed to Educational Technology.

Kathryn Nelson, in her 1985 paper, "Liberal Arts in a High Tech World", a retrospective portrait is persented of a world whcih has seemingly become devoid of humanilty and true liveral education. "The society suffers from a loss of skills for living, a loss of humanity and a growing lack of skills for dealing with a gloval society, a chinging world for managing technology and deciding whether it will be master or slave" (Nelson, 10).

So far, it is Nelson's contention that society has opted for the role of slave., Learning has witnessed a profound shift from "classical education" to a process of mere training. As a result, many lack basic reading, cognitive, and spelling skills upon graduation from high school (Nelson, 7).

Vocabulary

It is certainly no secret that educational technologists have their own jargon, much like any other field or discipline. There has been concern in recent years that the very terms technology uses, as well as the dialogue created, seems to isolate people from one another. Sally Jorgenson once conducted interviews regarding this matter with teacher education faculty at Indiana University, yielding some poignant commentary. "The interviewee also asserted that the machine talk, the technocratic language of IST is threatening, alienating, and totally unnecessary. " 'Humans don't talk like that,' he said" (Jorgenson, 268).

James Finn has also noted, in "Dialogue in Search of Relevance" that technology's very dialogue has helped create an atmosphere of "impersonal control over people."

Remedies for this particular ailment have not come easy, but Finn has offered one practical suggestion. "Unless we listen to what some of our bright young people are saying, to what the new left is trying to expound, to what some artists are expressing, we, as educators, may fail this country, and all the young people in it" (Finn, 143). Although Finn's critique was aimed primarily at the college educational system, many of his ideals appear relevant to the K-12 classroom as well.

Science, Technology, and Literature

Perhaps one of the least addressed aspects of technology as it related to education is in the area of science. Because technology is in such a constant state of flux, many of the new innovations developed through the fusing of these two related fields appear increasingly normal. The seventies and eighties brought the world a collection of art and literature brimming with science fiction and technology related themes. Authors such as Ray Bradbury (Fahrenheit 451), Michael Crichton (Jurassic Park), and Arthur C. Clarke (2001: A Space Odyssey) have carried on the literary tradition of Orwell by daring to envision the dangers of the dehumanized society in their writings.

While many interpret these pop culture opuses as mere pleasure reading, others have realized elements of reality apparent in them all. In 1987, Randy Nichols noted that Educational Technology has the possibility of mutating into new potential categories, such as Educational Bio-Technology. The

proposed sub-field, as outlined in his article, sounds a great deal like "human engineering." "The key characteristic is physical invasion of the body, though psychological changes certainly occur also. Educational bio-technologists could consist of implanting microprocessors in people or giving food and drugs to people to change some aspect of their education" (Nichols, 128).

Some Conclusions

The critical research seems to indicate that there are no easy answers to the increasing problem of dehumanization that confronts us each day both in society, and in our K-12 educational system The monumental growth of technology as a field has brought many issues into question regarding our own humanity, literacy, emotions, skills, and educational experiences. The critics seem to indicate that the abuse of technology has caused a chaotic trend of dehumanization since the fifties, and educational standards continues to plummet.

The critics essentially have noted that technology is not an end in itself, and therefore, should not be regarded as such. Objectivity has all but replaced subjectivity in the curriculum, and learning has become a passive process rather than an active one. The acquiring of knowledge has too often been confused with rote memorization, drill and practice tests, and other devices which seem to stunt the cognitive and reasoning abilities which must be nurtured in students.

As a result, students have become the by-product of an educational hierarchy which establishes what will or will not be learned. This hierarchy has manifested itself in various forms, including high powered school administrations, big business, and most notably, the military. Though some have called for radical revisionism in the educational process, many indications seem to suggest that their attempts were futile. Poor interaction, discussion, and literacy skills are just some of the problems facing students as a result of this imbalanced technological structuring.

Fear, isolation, submission, and loss of teacher and student identity seem to be recurring themes contained in much of the critical theory concerning dehumanization. When examining the work of the critics as a whole, there seems to be no question that more research needs to be done in this particular area. Compromise between liberal education and technology is a start, but not a direct cure-all for the many complexities which dehumanization presents.

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